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[Page 51682-51685]
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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 2002-NE-16-AD; Amendment 39-13290; AD 2003-17-15]

RIN 2120-AA64

Airworthiness Directives; Rolls-Royce plc. RB211-535 Turbofan Engines

AGENCY: Federal Aviation Administration, DOT.

ACTION: Final rule.

SUMMARY: This amendment supersedes an existing airworthiness directive (AD) that applies to Rolls-Royce plc. (RR) models RB211-535E4-37, RB211-535E4-B-37, and RB211-535E4-B-75 turbofan engines, with certain part number (P/N) low pressure (LP) turbine stage 2 discs installed. That AD currently requires establishing new reduced LP turbine stage 2 disc cyclic limits. That AD also requires removing from service affected discs that already exceed the new reduced cyclic limits, and removing other affected discs before exceeding their cyclic limits, using a drawdown schedule. This amendment requires changing certain cyclic limits, changing the effective date of certain disc cyclic lives, and would allow intermix of Flight Plan A and Flight Plan B intermix calculations. This amendment is prompted by a reassessment of the thermal and stress data from recent operational experience and comments received from operators on the current AD. We are issuing this AD to prevent LP turbine stage 2 disc failure, which could result in uncontained engine failure and possible loss of the airplane.

DATES: Effective October 2, 2003. The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of October 2, 2003.

ADDRESSES: The service information referenced in this AD may be obtained from Rolls-Royce plc, P.O. Box 31 Derby, DE24 8BJ, United Kingdom; telephone 011-44-1332-242424; fax 011-44-1332-249936. This information may be examined, by appointment, at the Federal Aviation Administration (FAA), New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street NW., suite 700, Washington, DC.

FOR FURTHER INFORMATION CONTACT: Ian Dargin, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803-5299; telephone (781) 238-7178; fax (781) 238-7199.

SUPPLEMENTARY INFORMATION: A proposal to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) by superseding AD 2002-23-08, Amendment 39-12952 (67 FR 71094, November 29, 2002), which applies to RR models RB211-535E4-37, RB211-535E4-B-37, and RB211-535E4-B-75 turbofan engines, with certain P/N low pressure LP turbine stage 2 discs installed was published in the Federal Register on March 25, 2003 (68 FR 14355). That action proposed to require establishing new reduced LP turbine stage 2 disc cyclic limits. That AD also requires removing from service affected discs that already exceed the new reduced cyclic limits, and removing other affected discs before exceeding their cyclic limits, using a drawdown schedule in accordance with mandatory service bulletin (MSB) RB.211-72-D181, Revision 3, dated August 16, 2002.

Comments

Interested persons have been afforded an opportunity to participate in the making of this amendment. No comments were received on the proposal or the FAA's determination of the cost to the public. The FAA has determined that air safety and the public interest require the adoption of the rule as proposed.

Regulatory Analysis

This final rule does not have federalism implications, as defined in Executive Order 13132, because it would not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Accordingly, the FAA has not consulted with state authorities prior to publication of this final rule.

For the reasons discussed above, I certify that this action (1) is not a "significant regulatory action" under Executive Order 12866; (2) is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A final evaluation has been prepared for this action and it is contained in the Rules Docket. A copy of it may be obtained by contacting the Rules Docket at the location provided under the caption ADDRESSES.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

PART 39–AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. Section 39.13 is amended by removing Amendment 39-12952 (67 FR 71094, November 29, 2002) and by adding a new airworthiness directive, Amendment 39-13290, to read as follows:

AIRWORTHINESS DIRECTIVE

Aircraft Certification Service
Washington, DC

U.S. Department
of Transportation
Federal Aviation
Administration

We post ADs on the internet at "www.faa.gov"

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

2003-17-15 Rolls-Royce plc: Amendment 39-13290. Docket No. 2002-NE-16-AD. Supersedes AD 2002-23-08, Amendment 39-12952.

Applicability: This airworthiness directive (AD) is applicable to Rolls-Royce plc. (RR) models RB211-535E4-37, RB211-535E4-B-37, and RB211-535E4-B-75 turbofan engines, with low pressure (LP) turbine stage 2 discs part numbers (P/Ns) UL11508, UL17141, UL18947, UL29029, and UL37352 installed. These engines are installed on, but not limited to, Boeing 757 and Tupolev Tu204 airplanes.

Note 1: This AD applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (h) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: You are responsible for having the actions required by this AD performed within the compliance times specified unless the actions have already been done.

To prevent LP turbine stage 2 disc failure, which could result in an uncontained engine failure and possible loss of the airplane, do the following:

Cycle Limits

(a) Change the RR Time Limits Manual cyclic limits for LP turbine stage 2 discs as specified in the following Table 1:

Table 1.–Time Limits Manual (TLM) Cyclic Limits

Date of reduced life limit	Life limits for RB211-535E4 engines operating in flight plan A, and RB211-535E4-B engines	Life limits for RB211-535E4 engines operating in flight plan B
(1) December 31, 2001....	23,200 cycles-since new (CSN)…..	19,700 CSN.
(2) December 31, 2002....	22,500 CSN.....…….	19,000 CSN.
(3) December 31, 2003....	21,500 CSN.....…….	18,000 CSN.
(4) December 31, 2004....	20,000 CSN.....…….	16,500 CSN.
(5) December 31, 2005....	18,100 CSN.....…….	14,600 CSN.

RB211-535E4 Engines Operating to Flight Plan A, and RB211-535E4-B Engines

(b) For RB211-535E4 engines operating to flight plan A, and RB211-535E4-B engines, remove the LP turbine stage 2 disc from service using the CSN and Action times listed in the following Table 2.

Table 2.–Drawdown Schedule for RB211-535E4 Engines Operating to Flight Plan A, and RB211-535E4-B Engines

Disc CSN	Action	Replace disc	
		Without eddy current inspection	With eddy current inspection
(1) 20,001 CSN or greater on December 31, 2000.	Remove disc from service or perform optional on-wing eddy current disc inspection within 21 days after the effective date of this AD.	Within 21 days after the effective date of this AD.	Within 3,000 cycles-in-service (CIS) after the inspection, but do not exceed the new reduced life limit specified in Table 1 of this AD
(2) 18,100 to 20,000 CSN on December 31, 2000.	Remove disc from service or perform optional on-wing eddy current disc inspection.	Before accumulating 21,000 CSN or within 21 days after the effective date of this AD, whichever occurs first.	Within 3,000 CIS after the inspection, but do not exceed the new reduced life limit specified in Table 1 of this AD
(3) Fewer than 18,100 CSN on December 31, 2000 and greater than 20,000 CSN on December 31, 2004.	Remove disc from service or perform optional on-wing eddy current disc inspection.	Before accumulating 20,500 CSN or by December 31, 2004, whichever occurs first.	Within 3,000 CIS after the inspection, but do not exceed the new reduced life limit specified in Table 1 of this AD.
(4) Fewer than 18,100 CSN on December 31, 2000 and greater than 18,100 CSN on December 31, 2005.	Remove disc from service or perform on-wing eddy current disc inspection.	Before accumulating 20,000 CSN or by December 31, 2005, whichever occurs first.	Within 3,000 CIS after the inspection, but do not exceed the new reduced life limit specified in Table 1 of this AD.
(5) Fewer than 18,100 CSN on December 31, 2000 and fewer than 18,100 CSN on December 31, 2005.	No action required.....	N/A.....	N/A.

(c) Information regarding disc removal may be found in 3.A. of the Accomplishment Instructions of Mandatory Service Bulletin (MSB) RB.211-72-D181, Revision 3, dated August 16, 2002.

(d) The optional on-wing eddy current disc inspection noted in Table 2 of this AD must be performed in accordance with 3.C.(1) through 3.C.(6) of the Accomplishment Instructions of MSB RB.211-72-D181, Revision 3, dated August 16, 2002.

RB211-535E4 Engines Operating to Flight Plan B

(e) For RB211-535E4 engines operating to flight plan B, remove the LP turbine stage 2 disc from service using the CSN and Action times listed in the following Table 3.

Table 3.–Drawdown Schedule for RB211-535E4 Engines Operating to Flight Plan B

Disc CSN	Action	Replace disc	
		Without eddy current inspection	With eddy current inspection
(1) 16,501 CSN or greater on December 31, 2000.	Remove disc from service or perform optional on-wing eddy current disc inspection within 21 days after the effective date of this AD.	Within 21 days after the effective date of this AD.	Within 3,000 CIS after the inspection, but do not exceed the new reduced life limit specified in Table 1 of this AD.
(2) Greater than 14,600 CSN on December 31, 2000.	Remove disc from service or perform optional on-wing eddy current disc inspection.	Before accumulating 17,500 CSN or within 21 days after the effective date of this AD, whichever occurs first.	Within 3,000 CIS after the inspection, but do not exceed the new reduced life limit specified in Table 1 of this AD.
(3) Fewer than 14,600 CSN on December 31, 2000 and greater than 16,500 CSN on December 31, 2004.	Remove disc from service or perform optional on-wing eddy current disc inspection.	Before accumulating 17,000 CSN or by December 31, 2004, whichever occurs first.	Within 3,000 CIS after the inspection, but do not exceed the new reduced life limit specified in Table 1 this AD.
(4) Fewer than 14,600 CSN on December 31, 2000 and greater than 14,600 CSN on December 31, 2005.	Remove disc from service or perform on-wing eddy current disc inspection.	Before accumulating 16,500 CSN or by December 31, 2005, whichever occurs first.	Within 3,000 CIS after the inspection, but do not exceed the new reduced life limit specified in this AD.
(5) Fewer than 14,600 CSN on December 31, 2000 and fewer than 14,600 CSN on December 31, 2005.	No action required.....	N/A.....	N/A.

(f) Information regarding disc removal may be found in 3.A. of the Accomplishment Instructions of MSB RB.211-72-D181, Revision 3, dated August 16, 2002.

(g) The optional on-wing eddy current disc inspection must be performed in accordance with 3.C.(1) through 3.C.(6) of the Accomplishment Instructions of MSB RB.211-72-D181, Revision 3, dated August 16, 2002.

Note 2: For engines moving from Flight Plans A to B or B to A, the intermix calculations found in MSB RB.211-72-D181, Revision 3, dated August 16, 2002, may be applied to the life limits.

Alternative Methods of Compliance

(h) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Engine Certification Office

(ECO). Operators must submit their request through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, ECO.

Note 3: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the ECO.

Special Flight Permits

(i) Special flight permits may be issued in accordance with §§ 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the requirements of this AD can be done.

Documents That Have Been Incorporated By Reference

(j) The actions must be done in accordance with Rolls-Royce plc mandatory service bulletin RB.211-72-D181, Revision 3, dated August 16, 2002. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Rolls-Royce plc, P.O. Box 31 Derby, DE24 8BJ, United Kingdom; telephone 011-44-1332-242424; fax 011-44-1332-249936. Copies may be inspected at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street, NW, suite 700, Washington, DC.

Note 4: The subject of this AD is addressed in CAA airworthiness directive 006-05-2001, dated August 3, 2001.

Effective Date

(k) This amendment becomes effective on October 2, 2003.

Issued in Burlington, Massachusetts, on August 20, 2003.
Francis A. Favara,
Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.
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